

REMARKS

Claims 1 and 3-5 are currently pending in the present application. No amendments have been made by way of the present submission, thus, no new matter has been added.

In view of the following remarks, the Examiner is respectfully requested to withdraw all rejections and allow the currently pending claims.

Statement on the Substance of the Interview

Applicants take this opportunity to thank the Examiner for the courtesies extended during the Interview conducted on October 14, 2009. In the Interview Summary form dated October 20, 2009, the Examiner has commented as follows:

Applicants' representative indicated that the data provided in Table 4 in the Remarks filed April 29, 2009 show superior activities for Examples 14 and 2 (2,3,6,7-tetrasubstituted fluorenyl species) as compared to Examples B and 22 (2,7-disubstituted fluorenyl species). However, applicants are reminded that the metallocene compound (I) of at least pending claim 1 includes those 2,7-disubstituted species and such showing does provide any criticality to claim 1 and its dependent claims. Furthermore, the showing of superior activities of Examples 14 and 2 are limited to a few octamethyloctahydrodibenzofluorenyl containing metallocene, the showing is not commensurate to the scope of claim 3 where the substituents on the fluorenyl, R6, R7, R10 and R11, can be any hydrocarbon or silicon containing group.

Applicants comment that while they appreciate the apparent indication of allowability for octamethyloctahydrodibenzofluorenyl containing metallocene compounds, in fact, evidence of superior activity that is commensurate with all pending claims has been argued and substantiated on the record. This will be explained in greater detail below.

Issue under 35 U.S.C. § 103(a)

Claims 1 and 3-5 are rejected under 35 U.S.C. § 103(a) as being obvious over Hasegawa, US 6,207,774 (hereinafter referred to as Hasegawa '774) alone or in view of Nakanaga, JP 05-320248 (hereinafter referred to as Nakanaga '248).

Applicants respectfully traverse this rejection.

As discussed above, the Examiner has admitted that superior results have been demonstrated for the "tetrasubstituted" fluorenyl group as compared to the "disubstituted" fluorenyl group only by use of the "octamethyloctahydrodibenzofluorenyl" group as the "tetrasubstituted" fluorenyl group. However, Applicants submit that evidence also exists showing that many different "tetrasubstituted" fluorenyl groups demonstrate superior results as compared to "disubstituted" fluorenyl groups. Reference may be made to evidence already on the record, including the examples of specification as filed.

For example, reference is made to Examples 20, 21 and 25, each of which are "tetrasubstituted" fluorenyl groups as follows:

Example 20: (di(p-tolyl)methylene(cyclopentadienyl)(2,7-dimethyl-3,6-di-tert-butylfluorenyl)zirconium dichloride)

Example 21: (di(p-tolyl)methylene (cyclopentadienyl)(1,1',3,6,8,8'-hexamethyl-2,7-dihydrodicyclopentafluorenyl)zirconium dichloride)

Example 25: (di(p-tolyl)methylene(cyclopentadienyl)(2,7-diphenyl-3,6-di-tert-butylfluorenyl)zirconium dichloride)

As is evident, all of the above have “tetrasubstituted” fluorenyl groups. Further, the results associated with the above Examples are compared with with “disubstituted” fluorenyl groups, for example of Example 22 as follows:

Example 22: di(p-tolyl)methylene(cyclopentadienyl)(2,7-di-tert-butylfluorenyl)zirconium dichloride).

Below in Table 1 (which reproduces results from the specification as filed), Applicants provide a clear comparison between Examples 20, 21, 25 and 22. A review of the specification reveals that all of the metallocene compounds of Examples 20, 21, 25 and 22 utilize the same substituents of the bridged methylene, the same cyclo-pentadienyl group, the same metal (zirconium) and the same ligand of chloride. These Examples thus only differ with respect to the substituents on the fluorenyl group (note that the fluorenyl group of example 21 is represented by the formula [V]). Further, the co-catalyst is the same, as is the amount of octen(C8), the reaction time and the reaction temperature.

[Table 1]

		compounds note	H ₂ ml	Yield g	Mileage kg/mmol-Zr	Activity kg/mmol-Zr•hr
tetra- substituted	example 20	i	1500	62.4	124.8	249.6
	example 21	j	1500	67.9	135.8	271.6
	example 25	n	1500	74.2	74.2	148.4
di- substituted	example 22	k	1200	32.5	65	130

A review of these results reveals that superior activity is achieved for additional “tetrasubstituted” fluorenyl groups as compared to “disubstituted.” Such superiority is in addition

to the superiority that has already been acknowledged by the Examiner with respect to the use of the “octamethyloctahydrodibenzofluorenyl” tetrasubstitution.

In addition, Examples 20, 21 and 25 differ from Example 22 with respect to the amount of H₂. The influence of the amount of H₂ is demonstrated as following Table 2. Specifically, Example 12 and 13 use the same metallocene compound and the same co-catalyst.

[Table 2]

compounds note		H ₂ ml	Activity kg/mmol-Zrhr
b	example 12	0	717
	example 13	1500	279.2

As shown in the above Table 2, the activity of the catalyst becomes lower as the amount of H₂ increases. Therefore, even though Examples 20, 21 and 25 use more H₂ than example 22, the activities of the catalyst of Examples 20, 21 and 25 are higher than that of Example 22. In other words, if Examples 20, 21 and 25 were to have contained the same amount of H₂ as Example 22, they would have shown an even higher activity than the results shown above Table 1. Thus, the difference in amount of H₂ is not slanted in favor of Examples 20, 21 and 25, but in fact, is slanted against Examples 20, 21 and 25.

Applicant reminds the Examiner that the comparative showing need not compare the claimed invention with all of the cited prior art, In re Fenn et al., 208 USPQ 470 (CCPA 1981), but only with the closest prior art. In re Holladay, 199 USPQ 516 (CCPA 1978); see also In re Merchant, 197 USPQ 785 (CCPA 1978); see also In re Wood et al., 202 USPQ 171 (CCPA 1979). In the case of chemical compounds, this means only the compound or compounds closest structurally thereto must be tested. In re Kuderna, 165 USPQ 575 (CCPA 1970). In fact,

Applicant is permitted to test compounds which are even more closely related than those of the prior art. Ex parte Humber, 217 USPQ 265 (POBA 1981). In the present instance, it is evident that restriction of the metallocene to only one type of tetrasubstitution is unnecessary. The application as filed clearly demonstrates superiority for a variety of types of tetrasubstitution. Such superiority as compared, for instance, to disubstitution, is completely unexpected in view of the knowledge of those of skill in the art. Such secondary considerations rebut any hypothetical prima facie case of obviousness and require withdrawal of the outstanding rejection.

Indeed, the policy rationale for use of this secondary consideration is well established: Something that would have been surprising to a person of ordinary skill in a particular art probably would not have been obvious. In re Mayne, 41 USPQ2d 1451, 1455 (Fed. Cir. 1997); In re Soni, 34 USPQ2d 1684, 1687 (Fed. Cir. 1995). In the present instance, it was surprising that tetrasubstitution of the fluorenyl groups would be superior to disubstitution of the fluorenyl group. Applicants have demonstrated such superiority for many examples, such as those discussed above, and that already argued on the record. Such evidence is certainly commensurate in scope with the subject matter sought to be patented.

Obviousness-type Double Patenting

Claims 1 and 3-5 are rejected on the ground of non-statutory obviousness-type double patenting as being obvious over claims 1-16 of U.S. Patent No. 7,393,965.

Applicants respectfully traverse and submit that the Terminal Disclaimer attached hereto, which is directed to U.S. Patent No. 7,393,965, renders this rejection moot. Reconsideration and withdrawal thereof are respectfully requested.

In view of the above, Applicants believe that the pending application is in condition for allowance. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie, Reg. No. 42,874, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By  #42874.

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Attachment: Terminal Disclaimer directed to U.S. Patent No. 7,393,965